TEMPERATURE VARIATION OF MAGNETIC SUSCEPTIBILITY OF MOLYBDENITE SINGLE CRYSTAL

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The magnetic properties (anisotropy and absolute susceptibility) of molybdenite crystals at different temperatures were studied in this laboratory by Dutta (1945). But the measurements of susceptibility at high temperatures being done in air with quartz fibre torsion balance (Bose, 1947) utilising vertical gradient of the magnetic field were very much disturbed by convection currents. The results were therefore not very reliable. In consequence the susceptibility, $\chi_\perp$ (for directions in the basal plane) at different temperatures has been measured afresh in vacuum utilising very sensitive and accurate method of measurement (Das 1963).

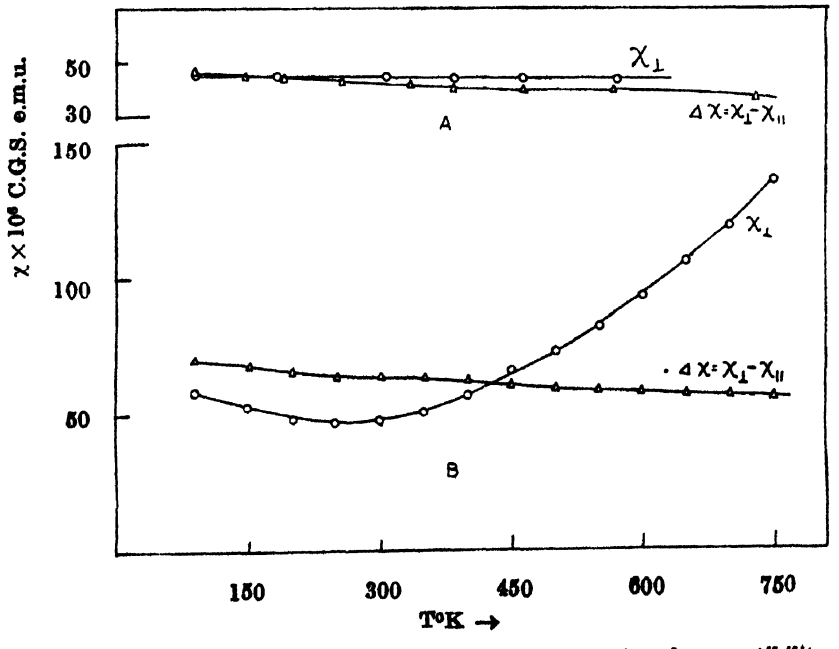

Figure 1. Temperature variation of anisotropy ($\Delta\chi = \chi_\perp - \chi_\parallel$) and susceptibility ($\chi_\perp$) of molybdenite.
A ——→ Earlier measurement
B ——→ Present measurement

Results of these measurements as well as those of fresh measurements of anisotropy are shown in the adjoining figure wherein the results of earlier measurements by Dutta (1945) are also represented for the sake of comparison. It is seen from the figure that though the temperature variation of anisotorpy has remained practically of the same nature in both the measurements yet that of susceptibility has undergone much change. In earlier measurements $\chi_\perp$ continuously decreased with the rise of temperature whereas in the present measurements it first decreased with the rise of temperature (within the range $90°K-250°K$) then increased with further rise of temperature. This high temperature behaviour of $\chi_\perp$ in case of molybdenite, a semiconductor, is evidently to be attributed to the increase of carrier concentration with the rise of temperature. Earlier interpretation of the results are therefore no longer tenable and the new results are to be interpreted in a different way. Investigation in this line are in progress and the results will be published in due course.

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ERRATA

Space group of O-benzoyl benzoic acid

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The authors now reports that the experimental intensity distribution curves are actually centric, not hypercentric. A wrong scale factor was introduced in the calculation in averttently while putting the intensties of X-ray reflections to the same scale by the multiple film technique. The recalculated values of Wilson's ratio both for *okl* and *hol* reflections is 0.59.

Cosmic Ray stars in Photographic Emulsion at high Altitude

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Vol. 41, No 7, P. 475. Last line of the figure caption :
Read (b) for (a)
and (a) for (b)

An Improvement in the Technique of Time Measurement

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The diagrams have interchanged their locations with the figure numbers remaining in their correct positions.